

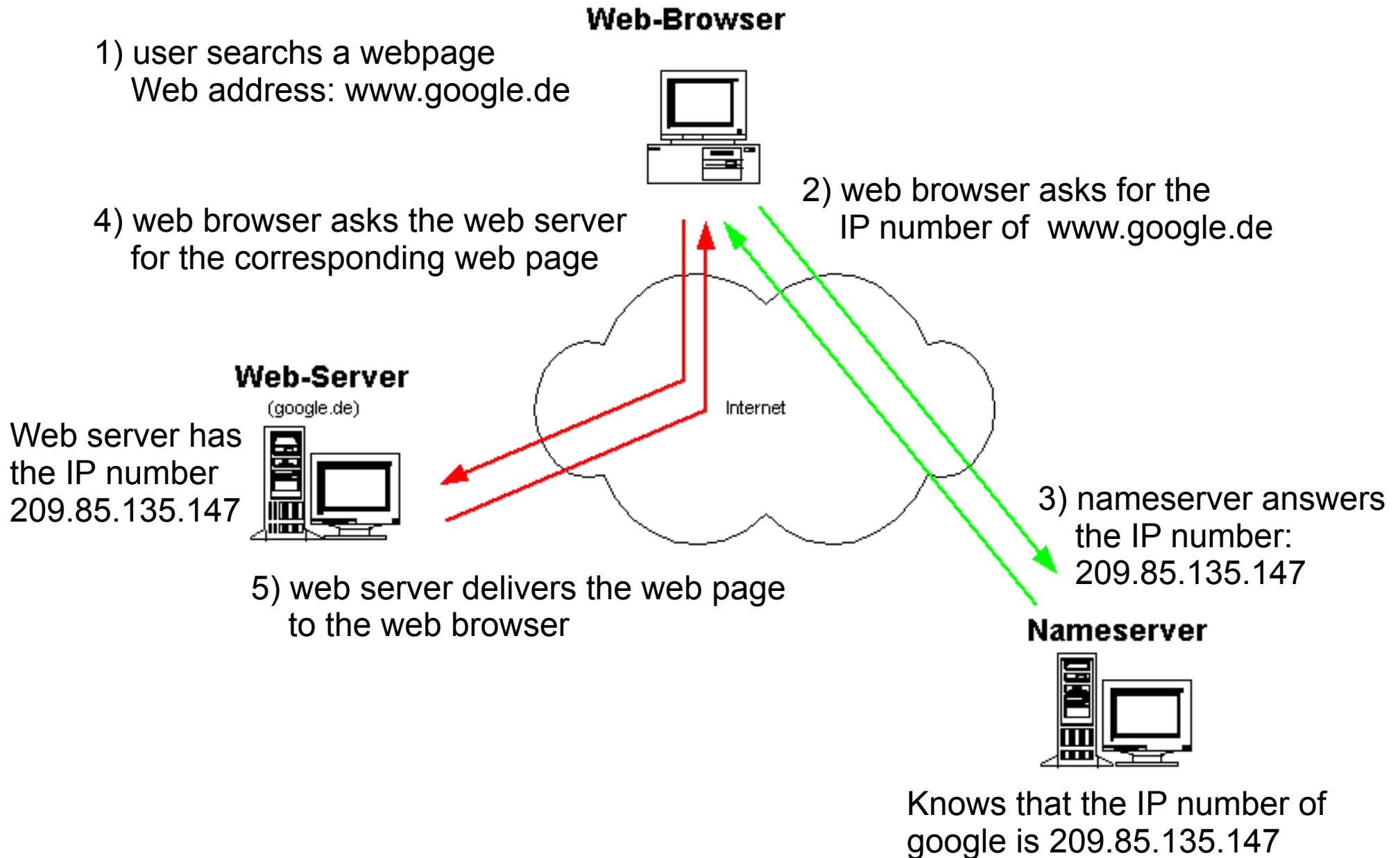
Web server

By Eva Reisinger
Supervisor Laszlo Kajan

Definition

- **Computer** with the web server software or the web server **software**
- **Delivers** documents (web pages) to clients
i.e. web browser
- Used for:
 - Hosting web pages
 - Gaming
 - Data storage
 - Running enterprise applications

Process



HTTP

- Hypertext Transfer Protocol
 - **Request-response** protocol between **client** and **server**
 - client submits an **HTTP request message** to the server
 - server returns a **HTTP response message** to the client
- HTTP session initiated by the client with a Transmission Control Protocol

Request methods

- GET
- POST
- PUT
- DELETE

GET

Requests a specified resource

→ uses an URI (Uniform Resource Identifier)

GET http://www.google.de/search?q=HTTP+get+example

Domain name

Start of the question

Parameter

```
GET /search?q=HTTP+get+example HTTP/1.1  
Host: www.google.de
```

POST

- Send information to the server to get a specified resources
 - are in the body of the message
 - are not shown in the URI

```
POST /search HTTP/1.1
Host: www.google.de
Content-Type: application/x-www-form-urlencoded
Content-Length: 19

q=HTTP+get+example
```

PUT/DELETE

- PUT

- Uploads a resource on a web server

- DELETE

- Deletes a specified source

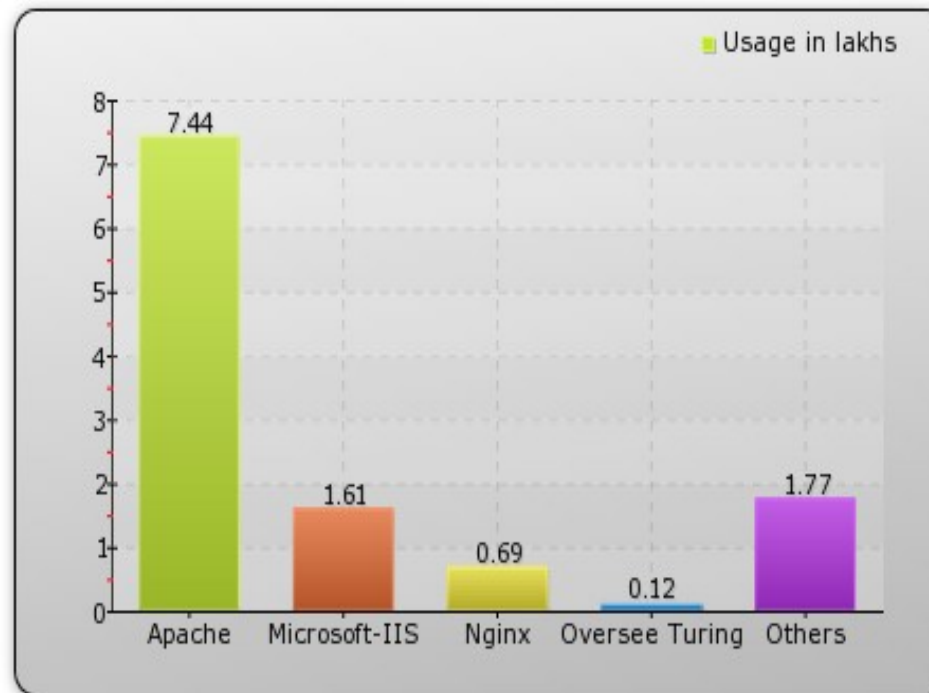
→ both methods are not very common in the standard configuration of web servers

→ used in the RESTful standard

HTTP is a stateless protocol

- Treats each request as an independent transaction
- Does not store or manage session information even if the requests come from one client
- Example:
 - When you locked in it has to be implemented on the application layer that the userID get stored. This can be done by creating and sending cookies

Popular HTTP servers



Apache



795547 websites run on Apache server

68.87% of the web world runs on Apache



Microsoft IIS



179455 websites run on Microsoft-IIS server

15.54% of the web world runs on Microsoft-IIS

Dynamic web pages

- Create and determine their content from several sources just at the moment when they are requested
 - still a HTML document but with changing content
- Server side scripting
 - Common Gateway Interface (CGI) → works with all scripting/programming languages
 - Modules on the webserver i.e. PHP → only works with PHP

CGI: Common Gateway Interface

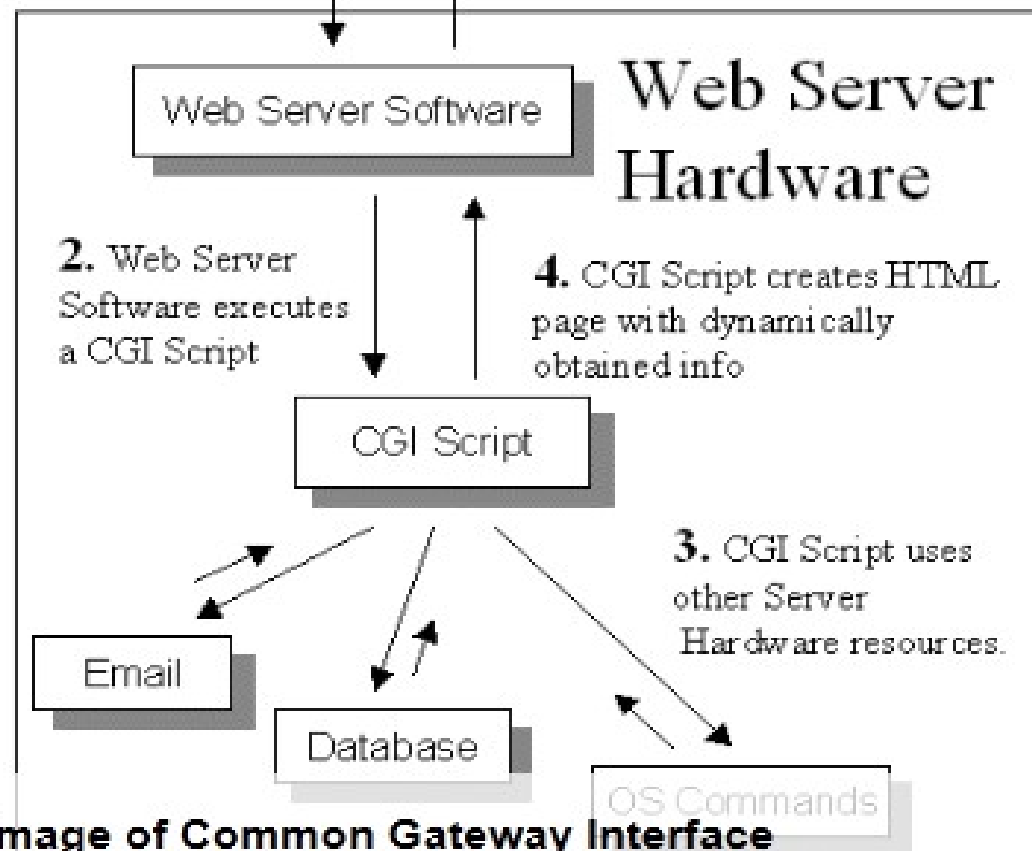
- Protocol that can be used to communicate between web server and programs
- Defines how the programs should interpret the input and give the output back to the server
- Makes it possible to run any content generating program → CGI programs
- CGI programs can be written in PHP, Perl, C...



Client Using Web Browser

1. Browser contacts server using HTTP Connection over the Internet

5. Web Server Software sends browser the HTML prepared by the CGI script



CGI: Common Gateway Interface

- Configure Apache

```
<Directory /home/*/public_html>  
  Options +ExecCGI  
  AddHandler cgi-script .cgi  
</Directory>
```

specify that CGI execution was permitted in a particular directory

tells the server to treat all files with the cgi extension as CGI programs

- output from a CGI program must be preceded by a header
→ tells the client what sort of content it is receiving

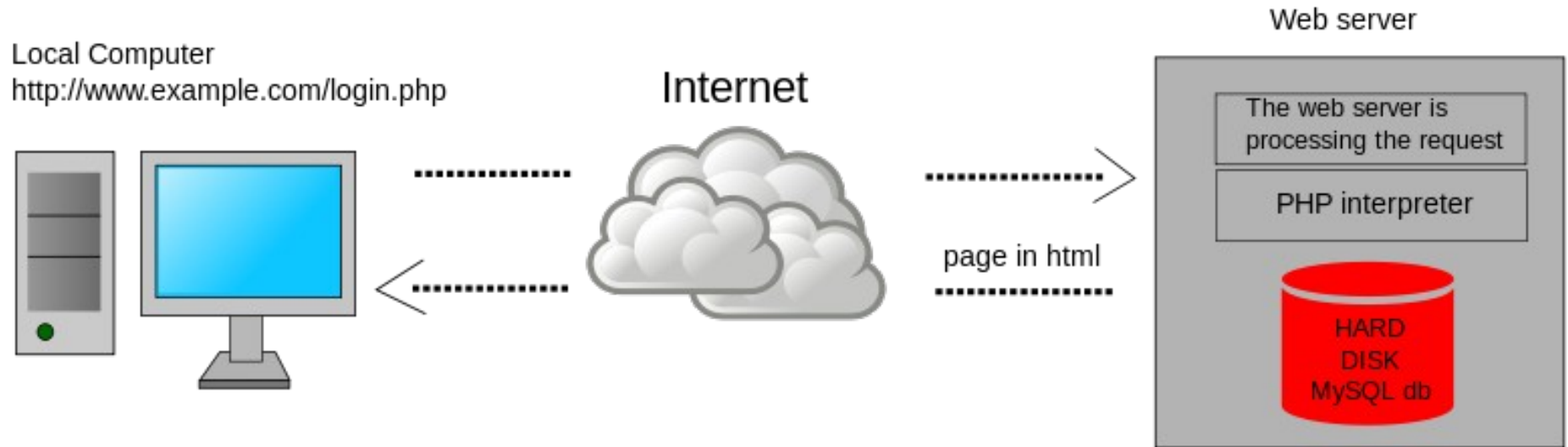
```
Content-type: text/html
```

PHP



- designed for Web development to produce dynamic Web pages
- PHP code in a requested file is executed on the server side by the webserver software i.e Apache
→ Output is a HTML file

PHP



Xampp is a project which offers an out of the box package containing apache, mysql, php for linux, windows, mac

Sources

- [Http://wiegmann-linux.de](http://wiegmann-linux.de)
- <http://www.greatstatistics.com/>
- <http://krum.rz.uni-mannheim.de/cgi-tut.html>
- <http://de3.php.net/manual/de/tutorial.requirements.php>
- <http://withfriendship.com/images/g/32216/Common-Gateway-Interface-image.gif>
- <http://httpd.apache.org/docs/2.0/howto/cgi.html#permissions>
- <http://en.wikipedia.org/>
- <http://www.teialehrbuch.de/>
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